Federal Communications Commission
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Small Entity Compliance Guide

Model for Prediction of Digital Television Field Strengths Received at Individual Locations

Report and Order
FCC 10-194
ET Docket No. 10-152
Released: November 23, 2010

This Guide is prepared in accordance with the requirements of Section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996. It is intended to help small entities—small businesses, small organizations (non-profits), and small governmental jurisdictions—comply with the new rules adopted in the above-referenced FCC rulemaking docket(s). This Guide is not intended to replace the rules and, therefore, final authority rests solely with the rules. Although we have attempted to cover all parts of the rules that might be especially important to small entities, the coverage may not be exhaustive. This Guide may, perhaps, not apply in a particular situation based upon the circumstances, and the FCC retains the discretion to adopt approaches on a case-by-case basis that may differ from this Guide, where appropriate. Any decisions regarding a particular small entity will be based on the statute and regulations.

In any civil or administrative action against a small entity for a violation of rules, the content of the Small Entity Compliance Guide may be considered as evidence of the reasonableness or appropriateness of proposed fines, penalties or damages. Interested parties are free to file comments regarding this Guide and the appropriateness of its application to a particular situation; the FCC will consider whether the recommendations or interpretations in the Guide are appropriate in that situation. The FCC may decide to revise this Guide without public notice to reflect changes in the FCC's approach to implementing a rule, or to clarify or update the text of the Guide. Direct your comments and recommendations, or calls for further assistance, to the FCC's Consumer Center:

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Model for Prediction of Digital Television Field Strengths Received at Individual Locations
Compliance Requirements

1. Overview of the Rules and Predictive Model

The Satellite Television Extension and Localism Act of 2010 (STELA) extends the statutory copyright license for satellite carriage of distant broadcast signals and related provisions in the Communications Act, and also amends certain provisions of the Communications Act and the Copyright Act. As part of the new statutory regime, the STELA requires the Commission to prescribe by rule a predictive model for reliably and presumptively determining the ability of individual locations, through the use of an antenna, to receive signals at the level of the signal intensity standard for digital television stations in Section 73.622(e)(1) of [its rules], including to account for the continuing operation of TV translator stations and low power television stations. The signal intensity standard in Section 73.622(3)(1) of the rules specifies the threshold level of signal strength at which digital television service is deemed to be available for reception off-the-air. That is, when a signal's strength is above that level, service is considered available; when it is below that level it is considered not available. The predictions from the model required by the STELA are to be used in determining whether individual households or other satellite subscribers are eligible to receive the signals of distant network-affiliated digital television stations, including TV translator and low power television stations, from their satellite carrier. A satellite subscriber is eligible to receive a distant network signal from its satellite service if the model predicts that no signals of that network are receivable off-the-air in its local market area.

In the *Report and Order* in this proceeding, the Commission amended its rules to establish a model for predicting the strength of digital television signals received at individual locations as required by the STELA. The predictive model the Commission adopted, which is based on the existing model for predicting the intensity of analog television signals at individual locations, allows such determinations to be made in a timely and cost-effective manner for all parties involved, including network TV stations, satellite carriers and satellite subscribers.

A copy of the *Report and Order* is available at:
http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1209/FCC-10-194A1.pdf

2. General Information

The digital television signal strength predictive model uses an existing model for predicting radio signal strengths at specific locations known as the "Individual Location Longley-Rice Model," or "ILLR model." To make its predictions as accurate a possible, this model incorporates features to account for terrain characteristics (such as hills), buildings, and land cover (such as forests), which have a major effect on the strength of received signals. The model is implemented using a computer software program that accesses databases describing terrain elevation data, descriptions of the local environment of building structures and vegetation features, and the population of transmitting facilities for which predictions are to be generated. The model assumes that a satellite subscriber would use an outdoor antenna at 6 meters (20 feet) for one story structures and 9 meters (30 feet) for structures taller than one story. There is no provision for prediction of signals using an

indoor antenna. The outdoor antenna is assumed to have the performance capabilities set forth in the digital television planning factors described in a technical bulletin prepared by the Commission's Office of Engineering and Technology (OET) titled "OET Bulletin No. 69, Longley-Rice Methodology for Evaluating TV Coverage and Interference," February 2006. OET Bulletin No. 69 is available on the Commission's website at http://www.fcc.gov/oet/info/documents/bulletins/#69.

The new digital television version of the ILLR model incorporates parameters and features appropriate for prediction of the signal strengths of digital television signals. This model is to be used for predicting the signals of full power TV stations, low power TV stations (including Class A stations) and TV translator stations. The specifications for the digital television ILLR model and information on the computer program source code and how to use it are provided in a technical bulletin prepared by the Commission's OET titled "FCC/OET Bulletin No. 73: The ILLR Computer Program For Predicting Digital Television Signal Strengths." This bulletin is available on the Commission's website at http://www.fcc.gov/oet/info/documents/bulletins/#73.

3. What are the local market areas of network television stations?

The Commission's rules define local market areas as the 210 "Designated Market Areas" identified by the A.C. Nielsen Company. A satellite subscriber is eligible to receive the signal of a distant (out of market) network station from its satellite service if none of the stations affiliated with that network that are located in the subscriber's DMA are predicted to be receivable at the subscriber's location.

4. Are separate predictions needed in the case of stations that broadcast multiple programs at the same time, *i.e.* provide multicast programming?

No. There is no need for multiple predictions from the digital ILLR model for the same station to address work multicast program streams. The prediction of signal strength for a digital television broadcast signal applies regardless of the content, including the presence of multicast program streams. If a household is predicted to receive a station, then all of that station's program streams will be received equally.

5. If a local station that could not be received at my location changes its transmitter so that its signal can now be received there or the Commission revises the prediction model, will I still be allowed to receive a distant network signal from my satellite service?

In cases where a location was predicted to be unserved by a local network station, the Commission's rules allow households that are receiving a distant network signal to maintain their eligibility to receive a distant network signal if either the station changes its signal coverage or the Commission updates the digital ILLR model. This provision avoids disruption of the existing services to which households have been accustomed to receiving. It applies only in cases where the household already is receiving a distant signal from its satellite provider prior to a change in the digital ILLR prediction model or in the coverage of the local station.

6. Where can I find documents about the model for prediction of digital television field strengths received at individual locations and the rules for its use?

FCC order adopting the predictive model: *Report and Order* in ET Docket No. 10-152, FCC 10-194, released November 23, 2010.
http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1209/DOC-302983A1.doc (Word)
http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1209/FCC-10-194A1.pdf (Acrobat)

Press Release:
http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1123/DOC-302983A1.doc (Word)
http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1123/DOC-302983A1.pdf (Acrobat)
http://www.fcc.gov/Daily_Releases/Daily_Business/2010/db1123/DOC-302983A1.txt (Text)

OET Bulletin No. 69:
http://www.fcc.gov/oet/info/documents/bulletins/#69 (Acrobat)

OET Bulletin No. 73:
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